LISTING OF CLAIMS:

1. A magnetic sensor comprising:

a first magneto-resistive bridge constructed by a plurality of magneto-resistive elements for detecting variation of ~~magnetic~~ a bias magnetic field; and

a second magneto-resistive bridge constructed by a plurality of magneto-resistive elements for detecting variation of the ~~magnetic field, wherein~~ bias magnetic field wherein:

the first magneto-resistive bridge and the second magneto-resistive bridge are disposed to be symmetrical to each other with respect to a direction of the ~~magnetic field, wherein~~bias magnetic field;

the plurality of magneto-resistive elements constituting the first magneto-resistive bridge are disposed to be symmetrical with one another with respect to the direction of the ~~electric field, and wherein~~bias magnetic field;

the plurality of magneto-resistive elements constituting the second magneto-resistive bridge are disposed to be symmetrical with one another with respect to the direction of the ~~magnetic field~~bias magnetic field;

each of the first and second magneto-resistive bridges comprises four radially disposed magneto-resistive elements, wherein the magneto-resistive elements of the plurality of magneto-resistive elements include pairs of confronting magneto-resistive elements, and wherein a middle point potential of each pair of magneto-resistive elements is set as an output of each magneto-resistive bridge; and

the magneto-resistive elements of each pair are arranged to form a line.

2. The magnetic sensor according to claim 1, wherein the plurality of magneto-resistive elements of the first or second magneto-resistive bridge are radially disposed.

3. The magnetic sensor according to claim 1, wherein all of the plurality of magneto-resistive elements of the first and second magneto-resistive bridge are disposed to have a fixed angle with respect to the direction of the magnetic field.

4. (Canceled)

5. (Canceled)

6. (New) The magnetic sensor according to claim 1, wherein the pairs of magneto resistive elements form an X-shape.

7. (New) The magnetic sensor according to claim 1, wherein the magneto resistive elements of each pair are aligned with one another to form a single straight line.